

CLAIMS

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1. An arrangement comprising:

gas discharge lamp means having lamp terminals;

frequency-converting power supply and ballasting means having input terminals and output terminals, the output terminals being: i) connected with the lamp terminals, and ii) operative, whenever ordinary power line voltage is applied to the input terminals, to provide operating voltage to the lamp terminals, the frequency of the operating voltage being different from that of the power line voltage; and

base means operative to rigidly hold together the lamp means and the frequency-converting power supply and ballasting means, thereby to form an integral lamp unit, the base means having: i) a screw base operative to be screwed into and held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes, and ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes.

2. An arrangement comprising:

gas discharge lamp means having lamp terminals, which, for optimally effective lamp operation, must be supplied with an operating voltage of frequency different from that of the power line voltage normally present on an ordinary electric utility power line;

frequency-converting power supply and ballasting means having input terminals and output terminals, the output terminals being connected with the lamp terminals and being operative, whenever power line voltage is applied to the input terminals, to provide the operating voltage thereto; and

base means operative to rigidly hold together the lamp means and the frequency-converting power supply and ballasting means, thereby to form an integral lamp unit, the base means having: i) a screw base operative to be screwed into and held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes, and ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes.

3. An arrangement comprising:

gas discharge lamp means having lamp terminals;

rectifier means having AC input terminals and DC output terminals, a DC voltage being supplied at the DC output terminals in response to the provision at the AC input terminals of the power line voltage normally present on an ordinary electric utility power line;

inverter means connected with the DC output terminals and operative to provide a high-frequency output voltage at a set of high-frequency output terminals, the frequency of the high-frequency output voltage being substantially higher than that of the power line voltage present on an ordinary electric utility power line;

L-C tank circuit means connected with the high-frequency output terminals and operative to resonantly interact with the high-frequency output voltage provided thereat, the L-C tank circuit having a tank inductor and a tank capacitor, the gas discharge lamp means being effectively connected in parallel with the tank capacitor; and

base means operative to hold together the gas discharge lamp means, the rectifier means, the inverter means and the L-C tank circuit means, thereby to form an integral lamp unit, the base means having: i) a screw base operative to be screwed into and to be held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes at which is sometimes provided the power line voltage present on an ordinary electric utility power line, and ii) electrode means connected with the AC input and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes;

whereby the lamp unit can be screwed into and be held by an ordinary Edison-type lamp socket, thereby to be properly powered from the power line voltage sometimes provided at the socket electrodes thereof.

4. The arrangement of claim 3 wherein: i) the L-C tank circuit comprises a series-combination of an inductor and a capacitor, and ii) this series-combination is series-resonant at or near the frequency of the high-frequency output voltage.

5. The arrangement of claim 4 wherein the gas discharge lamp means is connected in parallel with the capacitor of the series-combination.

6. An arrangement comprising:

power supply means having input terminals and output terminals, an AC output voltage being provided at the output terminals whenever the input terminals are provided with a power line voltage such as that normally present at an ordinary electric utility power line;

a series-combination of an inductor and a capacitor connected across the output terminals and constituted such as to exhibit series-resonant action at or near the fundamental frequency of the AC output voltage;

gas discharge lamp means having a set of lamp terminals connected in parallel circuit with the capacitor, thereby to constitute a load as well as an over-load protection means for the series-resonant series-combination; and

base means operative to hold together the power supply means, the series-combination, and the gas discharge lamp means, thereby to form an integral lamp unit, the base means having: i) a screw base operative to be screwed into and to be held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes at which is sometimes provided the power line voltage from an ordinary electric utility power line, and ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes;

such that the lamp unit can be screwed into and be held by an ordinary Edison-type lamp socket, thereby to be properly powered from the power line voltage sometimes provided at the socket electrodes thereof.

7. The arrangement of claim 6 wherein the power supply means comprises:

rectifier means connected with the input terminals and operative, whenever the power line voltage is supplied thereto, to provide a DC voltage at a center-tapped DC output;

half-bridge inverter means connected between the center-tapped DC output and the output terminals, the half-bridge inverter means being operative to convert the DC voltage to the AC output voltage.

8. The arrangement of claim 6 wherein the AC output voltage is characterized as having a fundamental frequency that is different from that of the power line voltage.

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